CLAIMS

What is Claimed:

1. An isolated polynucleotide comprising a sequence selected from the group consisting of:

(a) sequences provided in SEQ ID NO: 1-38, 42-204, 205, 207, 210-290, 293, 296, 297, 300 and 302-305;

(b) complements of the sequences provided in SEQ ID NO: 1-38, 42-204, 205, 207, 210-290, 293, 296, 297, 300 and 302-305;

(c) sequences consisting of at least 20 contiguous residues of a sequence provided in SEQ ID NO: 1-38, 42-204, 205, 207, 210-290, 293, 296, 297, 300 and 302-305;

(d) sequences that hybridize to a sequence provided in SEQ ID NO: 1-38, 42-204, 205, 207, 210-290, 293, 296, 297, 300 and 302-305, under moderately stringent conditions;

(e) sequences having at least 75% identity to a sequence of SEQ ID NO: 1-38, 42-204, 205, 207, 210-290, 293, 296, 297, 300 and 302-305;

(f) sequences having at least 90% identity to a sequence of SEQ ID NO: 1-38, 42-204, 205, 207, 210-290, 293, 296, 297, 300 and 302-305; and

(g) degenerate variants of a sequence provided in SEQ ID NO: 1-38, 42-204, 205, 207, 210-290, 293, 296, 297, 300 and 302-305.

2. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

(a) sequences provided in SEQ ID NO: 39-41, 206, 208, 209, 294, 295, 301, 306 and 307;

(b) sequences encoded by a polynucleotide of claim 1;

(c) sequences having at least 70% identity to a sequence encoded by a polynucleotide of claim 1; and

(d) sequences having at least 90% identity to a sequence encoded by a polynucleotide of claim 1.

3. An expression vector comprising a polynucleotide of claim 1 operably linked to an expression control sequence.

SUB A1

4. A host cell transformed or transfected with an expression vector according to claim 3.

5. An isolated antibody, or antigen-binding fragment thereof, that specifically binds to a polypeptide of claim 2.

6. A method for detecting the presence of a cancer in a patient, comprising the steps of:

(a) obtaining a biological sample from the patient;

(b) contacting the biological sample with a binding agent that binds to a polypeptide of claim 2;

(c) detecting in the sample an amount of polypeptide that binds to the binding agent; and

(d) comparing the amount of polypeptide to a predetermined cut-off value and therefrom determining the presence of a cancer in the patient.

7. A fusion protein comprising at least one polypeptide according to claim 2.

SUB A1

8. An oligonucleotide that hybridizes to a sequence recited in SEQ ID NO: 1-38, 42-204, 205, 207, 210-290, 293, 296, 297, 300 and 302-305 under moderately stringent conditions.

9. A method for stimulating and/or expanding T cells specific for a tumor protein, comprising contacting T cells with at least one component selected from the group consisting of:

(a) polypeptides according to claim 2;

(b) polynucleotides according to claim 1; and

(c) antigen-presenting cells that express a polypeptide according to claim 2,

under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

10. An isolated T cell population, comprising T cells prepared according to the method of claim 9.

11. A composition comprising a first component selected from the group consisting of physiologically acceptable carriers and immunostimulants, and a second component selected from the group consisting of:

(a) polypeptides according to claim 2;

(b) polynucleotides according to claim 1;

(c) antibodies according to claim 5;

(d) fusion proteins according to claim 7;

(e) T cell populations according to claim 10; and

(f) antigen presenting cells that express a polypeptide according to claim 2.

12. A method for stimulating an immune response in a patient, comprising administering to the patient a composition of claim 11.

13. A method for the treatment of a cancer in a patient, comprising administering to the patient a composition of claim 11.

14. A method for determining the presence of a cancer in a patient, comprising the steps of:

(a) obtaining a biological sample from the patient;

(b) contacting the biological sample with an oligonucleotide according to claim 8;

(c) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

(d) compare the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence of the cancer in the patient.

15. A diagnostic kit comprising at least one oligonucleotide according to claim 8.

16. A diagnostic kit comprising at least one antibody according to claim 5 and a detection reagent, wherein the detection reagent comprises a reporter group.

17. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating CD4+ and/or CD8+ T cells isolated from a patient with at least one component selected from the group consisting of: (i) polypeptides according to claim 2; (ii) polynucleotides according to claim 1; and (iii) antigen presenting cells that express a polypeptide of claim 2, such that T cell proliferate;

(b) administering to the patient an effective amount of the proliferated T cells,

and thereby inhibiting the development of a cancer in the patient.

18. A method for determining the presence of cancer in a patient, comprising the steps of:

(a) obtaining a biological sample from the patient;

(b) contacting the biological sample with a monoclonal antibody that binds to O8E;

(c) isolating cells that bind to the antibody that binds to O8E;

(d) isolating polynucleotides from the isolated cells;

(b) contacting the polynucleotides with an oligonucleotide according to claim 8;

(c) detecting an amount of the polynucleotides that hybridize to the oligonucleotide; and

(d) compare the amount of polynucleotides that hybridize to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence of the cancer in the patient.

19. The method of claim 18 wherein the biological sample comprises blood.

20. The method of claim 18 wherein the monoclonal antibody that binds to O8E is coated on immunomagnetic beads.

21. The method of claim 18 wherein the amount of polynucleotides that hybridize to the olignucleotide is determined using the polymerase chain reaction.